Peak to Valley Weather

The Official Newsletter of the National Weather Service Grand Junction 2844 Aviators Way

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Winter 2011

Mexican Hat, UT Observer Receives Top Reward

By John Kyle, Data Acquisition Program Manager

Recognizing more than 35 years of dedication, the National Weather Service named Mexican Hat, Utah, resident, Harlan Harrison, as a 2010 recipient of the agency's Thomas Jefferson Award for outstanding service in the Cooperative Weather Observer program. The award is the agency's most prestigious, and only five are presented this year to deserving cooperative weather observers from around the country.

Harlan Harrison receives his prestigious award from John Kyle, Grand Junction's Data Program Manager.

"Cooperative observers are the bedrock of weather data collection and analysis," said Douglas Crowley, Meteorologist in Charge of the Grand Junction, Colorado, National Weather Service office. "Numerous technological breakthroughs have brought great benefits to the Nation in terms of better forecasts and warnings. But without the century-long accumulation of accurate weather observations taken by volunteer observers, scientists could not begin to adequately describe the climate of the United States. We cannot thank Harlan Harrison enough for his years of service to America."

Harrison established the Mexican Hat observing site March 1, 1972, recording daily temperature and precipitation data, including snowfall, snow depth and evaporation, to the Grand Junction forecast office. His reports have provided important data to NOAA forecasters and hydrologists and climate scientists. Over the years, Harrison has provided more than 13,800 daily reports to the National Weather Service.

The National Weather Service's Cooperative Weather Observer Program has given scientists and researchers continuous observational data since the program's inception more than a century ago. Today, some 11,700 volunteer observers participate in the nationwide program to provide daily reports on temperature, precipitation and other weather factors such as snow depth, river levels and soil temperature.

The first extensive network of cooperative stations was set up in the 1890s as a result of an 1890 act of Congress that established the U.S. Weather Bureau. Many of the stations have even longer histories. John Campanius Holm's weather records, taken without benefit of instruments in 1644 and 1645, are the earliest known recorded observations in the United States.

Many historic figures have maintained weather records, including Benjamin Franklin, George Washington and Thomas Jefferson. Jefferson maintained an almost unbroken record of weather observations between 1776 and 1816, and Washington took weather observations just a few days before he died. The Jefferson and Holm awards are named for these weather observation pioneers.

Lewis Black of Blanding, UT and Maxine Deeter of La Sal, UT, current weather observers, congratulate Harlan on his award

Weather Awareness

Flood Preparedness Week for UTAH and Colorado March 14-18 2011

Skywarn Recognition Day 2010

By Jim Pringle, Warning Coordination Meteorologist, Aldis Strautins, Service Hydrologist

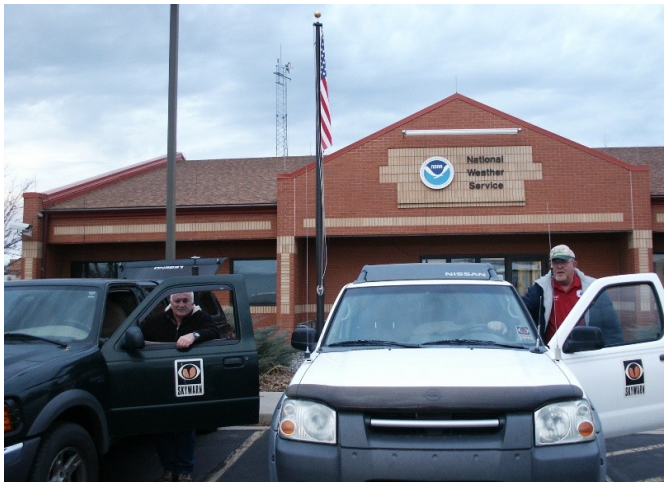
The National Weather Service (NWS) office in Grand Junction hosted the **2010 Skywarn Recognition Day** (SRD) amateur radio event for local Skywarn spotters on December 4th for the 24 hour period beginning at 00 hours GMT. There were about 20 Skywarn spotters from Delta, Mesa, and Montrose Counties who participated in the event which is intended to express the NWS' appreciation for our Skywarn volunteers. Skywarn Recognition Day is also a special event coordinated with the Amateur Radio Relay League (ARRL).

A lot of effort goes into the preparation for this event, especially by the Skywarn spotters who meticulously set up their communications equipment. Some of the volunteers drive more than 70 miles from their homes to our forecast office to participate in this special event.

During the recent SRD, Skywarn spotters representing the Grand Junction NWS office made *over 900 contacts* with other amateur radio operators throughout North America, including Skywarn spotters associated with other NWS forecast offices. There were even a few contacts made to foreign countries beyond North America.

Our volunteer **Skywarn** spotters are mobile storm spotters who communicate real-time severe weather reports to the NWS forecasters using amateur radio. These reports are used by the NWS forecasters to make warning decisions for the protection of lives and property.

A base command (known as "net control") setup at the Grand Junction NWS forecast office is permanently available for use by Skywarn spotters in west-central Colorado. Other Skywarn spotters in western Colorado and eastern Utah set up their net control positions within their counties to relay storm reports to the Grand Junction NWS office.



Amateur radio operator?

Have an interest in weather?

Want to be part of, or start, a Skywarn spotter group?

Contact Jim Pringle at the NWS office in Grand Junction.

A Look Back at January.....1963

By John Kyle, Data Acquisition Program Manager

Grand Junction experienced a very cold and snowy January in 1963. The month began with three inches of snow on the ground, and temperatures were a bit below normal, with highs around 30 degrees and lows in the single digits.

Three inches of snow fell on the fourth, further establishing a solid snowpack in the area, keeping cold air pooled in the Grand Valley. High temperatures for the following week were only up to 20 degrees.

On the 10th, another weather system provided more than four additional inches of snow to the area, followed by an extremely cold air mass over western Colorado. The low temperature in Grand Junction on the 12th was 21 degrees below zero. The following night was record setting with an all time low temperature recorded at 23 degrees below zero!

With the exception of one day, low temperatures were at or below zero from the 11th through the 24th of the month. The snowpack remained locked in place at eight inches.

The month ended being one of the coldest ever for Grand Junction, with the average temperature for the month at 12.1 degrees, a full 14 degrees colder than normal! Snowfall was a hefty 17.7 inches. The extreme cold in the valley killed and damaged many fruit trees in the area.

Much of the intermountain west experienced very cold conditions this month. Interestingly, this was not limited to our region, state, or even this continent.

London, England during The Big Freeze
(Courtesy Getty Images)

Lane End, Baildon, Great Britain after snowfall in January 1963
(Contributor of this photo: Humphrey Bolton. Copyrighted and licensed for further reuse.)

The winter of 1962–1963 (also known as The Big Freeze of 1963) was also one of the coldest winters on record in the United Kingdom (see the story here.)

Aviation Alley

INTRODUCTION TO THE ASOS GUIDE FOR PILOTS

The Automated Surface Observing System (ASOS) is a surface weather observing system implemented by the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DoD). ASOS is designed to support aviation operations and weather forecasting.

This guide is designed to provide basic ASOS information to pilots and other aviation users. Please refer to the FAA's Aeronautical Information Manual for operational guidance and to the FAA's Airport/Facility Directory, aeronautical charts and related publications, for ASOS broadcast frequency, dial-in telephone number, and location information. **Notices to Airmen contain ASOS system status.**

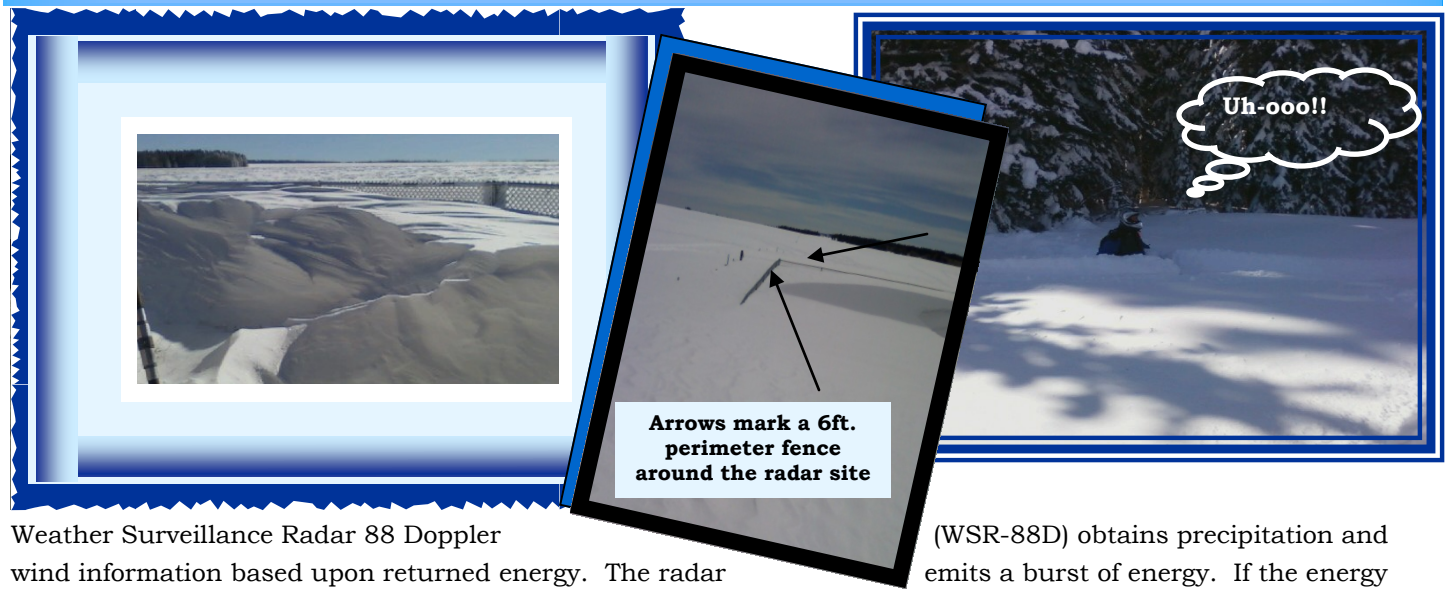
Air Carrier and Commercial Operators should refer to applicable parts of the Federal Aviation Regulations and their company Operations Specifications for use of automated weather observations. The ASOS provides minute-by-minute observations and perform the basic observing functions necessary to generate a surface weather observation and other aviation weather information. Pilots need to understand that automated and manual weather observations are different and have different operational implications.

ASOS and the human observer differ in methods of data collection and interpretation. For elements such as pressure, air temperature, dew-point temperature, wind, and precipitation accumulation, both the automated system and the observer use a fixed location and time-averaging technique.

For visual elements (i.e., sky condition, visibility, and present weather), observers use a fixed time, spatial-averaging technique while the ASOS uses a fixed location, time-averaging technique. Although this is a fundamental change, the manual and automated techniques yield similar results within the limits of their respective capabilities.

RADAR Winter Wonderland in Colorado

Photos by Micheal Martinez, Electronics Technician



Weather Surveillance Radar 88 Doppler (WSR-88D) obtains precipitation and wind information based upon returned energy. The radar emits a burst of energy. If the energy strikes an object (rain drop, bug, bird, etc), the energy is scattered in all directions. A small fraction of that scattered energy is directed back toward the radar. This reflected signal is then received by the radar during its listening period. Computers analyze the strength of the returned pulse, time it took to travel to the object and back, and phase shift of the pulse. This process of emitting a signal, listening for any returned signal, then emitting the next signal, takes place very fast, up to around 1300 times each second. Learn more about the Doppler radar. These photos were taken on the Grand Mesa during the winter of 2009-2010 near our WSR-88D, outside of Grand Junction, CO. Incidentally, this 88D is the second highest in the nation, residing near 10,000 feet. The snowmobilers (National Weather Service Electronics Technicians,) must travel 15 miles one way, via snowmobile or snow cat, to reach the site for maintenance. How's that for a day's work?

Request for Current Snowfall Reports

By Paul Frisbie, Senior Meteorologist

We appreciate the latest snowfall reports, whether measured or estimated. During winter storms, your snowfall report gives us valuable information and allows us to gage exactly what a storm is doing. Sometimes a storm does not produce the amount of snow that we expect, and other times more snow falls than expected. Believe it or not, there *are* times when a storm behaves exactly as it is expected to.

Occasionally, we hear comments that a spotter does not send in a snow report because the amount of snow matches the forecast. However, we don't always know this because we are not receiving the reports. You do not need to wait until it stops snowing to give us a report. If you have a snow report, whether it is measured or estimated, please let us know! Our email is wxgjt@noaa.gov or call us at 1-800-868-7964. The Grand Junction NWS appreciates the efforts and service the spotters provide to us.